

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF004 / SNM Capital Support Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0331**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose:

Upgrade Existing Pu Storage Facility Subproject

This subproject responds to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-3, which requires that the B371 facility be upgraded to withstand defined hazards (seismic events, fire, tornado). Specific upgrades identified in the 94-3 Integrated Program Plan (IPP), in the Authorization Basis (AB) document and its implementation plan were completed in March 1999.

An Interim Storage Upgrade Validation Effort. The Interim Storage Upgrade Validation Effort, completed in FY1998, identified the need to seismically upgrade the ceiling and storage racks of subbasement vaults 1101 and 1208 should interim storage of SNM be needed beyond 2002. The design and construction schedule for these upgrades will be completed in FY99. Should plans for off-site shipment not be progressing at the rate prescribed in the revised IPP and should alternatives to B371 storage not be identified, construction of the 1101/1208 upgrades would be expected to start in FY01.

There are no known stakeholder concerns involving upgrades to the B371 systems.

Scope:

Upgrade Existing Pu Storage Facility Subproject

This subproject involves modifications in B371 necessary to support its mission as a storage location for SNM until it is shipped offsite. These modifications will include

- conversion of Room 3337 to a secure storage vault. - COMPLETE FY 1997
- installation of a glovebox to introduce new pallets to the Stacker/Retriever. - CANCELLED FY 1997
- enhancements of Column Line T to increase the building's tolerance of seismic events - COMPLETE FY 1996
- Upgrades as specified in the DNFSB Recommendation 94-3 Integrated Program Plan (IPP) include the following subprojects.

1. HEPA filter plenum demister upgrades - COMPLETE FY1997
2. Combustible loading control program - COMPLETE FY1997
3. Repair and replace fire doors - COMPLETE FY1997
4. Subsurface drain system upgrades - COMPLETE FY1997
5. Egress route upgrades - COMPLETE FY1997
6. Life safety code exemption request - COMPLETE FY1997
7. Attic pipe seismic bracing - COMPLETE FY1998
8. Penetrations for room 3206 fire walls - COMPLETE FY1998
9. HVAC system seismic supports - COMPLETE FY1998
10. HVAC supply air HEPA filter - COMPLETE FY1998
11. Plenum deluge system modifications - COMPLETE FY1998

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 1 of 8

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF004 / SNM Capital Support Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0331**

Project Description Narratives

12. Basement level fire wall upgrades - COMPLETE FY1998
13. Cooling tower replacement - COMPLETE FY2000--Scope moved to PBS 16, WBS element 1.1.06.02.01.07
14. Emergency lighting - COMPLETE FY1999
15. SNM storage racks - COMPLETE FY1999
16. Life safety code modifications - COMPLETE FY1999
17. Upgrade lightning protection system - COMPLETE FY1999
18. Extend roof drains - CANCELLED FY1998
19. Inspect & upgrade SC-3 firewalls - COMPLETE FY1999
20. Inspect and upgrade exterior & stacker/retriever fire walls - INSP COMP FY 1998, UPGRADES COMPLETE FY1999
21. Miscellaneous BIO modifications - COMPLETE FY1998
22. Install HVAC relays in recirculation fans - COMPLETE FY1998
23. Exhaust duct stiffener modification - COMPLETE FY1999
24. Seismic evaluations - COMPLETE FY1999
25. Scrubber evaluation - COMPLETE FY1998
26. Inspect & upgrade vault fire walls - COMPLETE FY1999
27. Minor Modifications (redundant HVAC controllers) - COMPLETE 1999
28. Nitrogen Failure Prevention - COMPLETE FY1999

If accelerated shipment of Rocky Flats plutonium to Savannah River Site (SRS) is not achieved as defined in the revised 94-3 IPP, vaults 1101 and 1208 will be upgraded to make them viable for an interim storage mission (2002-2015). The design, cost estimates, and construction schedule will be completed in FY99. This PBS will be inactive in FY00, with no funds committed. Should adequate progress not be made in the shipment of plutonium to SRS, the project will be funded in FY01 (if necessary) and FY02 in accordance with the construction schedule and estimates, to assure completion of vaults for interim storage. If shipments are made as scheduled, the PBS will be closed in FY02.

Technical Approach: 1101/1208 upgrades will be performed by subcontracted construction services, including design and construction. The approach is to perform an initial engineering analysis and design, followed by a build subcontract. Oversight will be performed by Kaiser-Hill and Safe Sites of Colorado.

Project Status in FY 2006:

This project will be completed.

Post-2006 Project Scope:

No activities are currently scheduled to occur after 2006 for this project.

Project End State

The project is complete when all identified upgrades have been completed, including interim storage upgrades, if necessary.

Cost Baseline Comments:

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 2 of 8

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF004 / SNM Capital Support Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0331**

Project Description Narratives

Cost estimates are based on assumptions and data developed by the technical groups that have responsibility for managing the work. To the extent practical, all cost estimates are Activity-Based Costs (ABC) and tied directly to a defined and detailed work scope. The estimates are developed at the activity level and are further divided into line items. Line items represent individual resource contributions to activities and are the lowest level of input to the planning system. Once the cost estimate is developed, each activity is evaluated for cost, technical and schedule risk and the appropriate contingency is determined. Detailed estimates and the basis of estimates (BOEs) for the 2006 Closure Plan are available at the Site.

Safety & Health Hazards:

The principle hazards in the SNM Capital Support Project are radiological, chemical, and other standard industrial hazards commonly found in Pu buildings at RFETS. Most of these hazards will exist throughout the project and are related to construction upgrades for Pu storage, facility structure, safeguards and security, and safety systems. These hazards will be analyzed and categorized in accordance with the RFETS Safety and Health Program infrastructure policies, manuals, and procedures.

Safety & Health Work Performance:

This project will be completed within the RFETS Safety and Health Program and within the controls and authorization basis documents defined above to ensure the safety and health of the worker, public and the environment. RFETS has implemented an integrated safety management system consisting of the following elements: radiological safety, criticality safety, emergency management, fire safety, industrial hygiene, nuclear safety, occupational medicine, occupational safety, safeguards and security, safety integration, performance oversight, and standards management. RFETS provides site wide infrastructure programs for each functional area to establish consistent safety standards and support for this project. Safety and health success results from the efficient and effective implementation of these programs. This project is responsible for ensuring that the necessary elements of the safety and health programs are incorporated into the specific project plans and implementing documents, and that an appropriate Readiness Determination and Safety Evaluation Screen (SES)/Unreviewed Safety Question Determination (USQD) have been performed.

PBS Comments:

Engineering analyses were performed in FY96 and FY97, followed by A-E designs. These documents were based on analysis of safety concerns as documented in the IPP responding to DNFSB Recommendation 94-3.

The strategy includes design and construction of those upgrades currently identified, followed by design and construction of upgrades to be identified in the AB. More extensive upgrades will be required should plans for accelerated offsite shipment, not be progressing at the rate prescribed in the revised IPP. Finally, should alternatives to B371 storage not be identified, extensive modification to the facility will be required. The cost for these additional upgrades (safety margin, material relocation, and security) is estimated to be \$33M over FYs 99, 00, and 01. These funds will be redirected from other risk reduction work at the Site if accelerated offsite shipment is not achieved as outlined in the 94-3 IPP.

In FY97, Kaiser-Hill implemented a Conceptual Design Report (CDR) of an Interim Storage Vault (ISV) at the Site. As directed by Headquarters, no further work is being done on the ISV. The CDR will be held in reserve as a possible contingency to accelerated offsite shipment or additional Building 371 upgrades.

Baseline Validation Narrative:

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF004 / SNM Capital Support Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0331**

Project Description Narratives

Although the 2006 Closure Plan has not been officially validated, it has undergone a high level review by Rocky Flats Field Office (RFFO) and Headquarter personnel. Current independent validation efforts include the following: 1) RFFO has contracted an independent firm to perform a baseline confidence review of the 2006 Closure Plan by the end of FY99, and 2) the Office of Field Management (FM) has contracted a big-five accounting firm to validate the 2006 Closure Plan.

In addition to the 2006 Closure Plan validation efforts, results/recommendations from several previous baseline validation efforts were used in the development of the 2006 Closure Plan. These validations included: 1) The U.S. Army Corps of Engineers (USACE) performed a validation of the Rocky Flats Ten Year Plan in FY97/FY98, 2) Kaiser-Hill contracted Price Waterhouse Coopers, LLP to conduct an independent validation effort of the 2010 Closure Project Baseline that concluded in May of FY99, and 3) Kaiser-Hill engaged Arthur Andersen, LLP to conduct a schedule and cost risk review of the 2010 Closure Project Baseline.

General PBS Information

Project Validated?

Date Validated:

Has Headquarters reviewed and approved project?

No

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

| Drivers: | CERCLA | RCRA | DNFSB | AEA | UMTRCA | State | DOE Orders | Other |
|----------|--------|------|-------|-----|--------|-------|------------|-------|
| | N | N | Y | N | N | N | Y | N |

Project Identification Information

DOE Project Manager: Jessie Roberson

DOE Project Manager Phone Number: 303-966-2263

DOE Project Manager Fax Number: 303-966-4775

DOE Project Manager e-mail address: ten.year.plan@rfets.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 4 of 8

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF004 / SNM Capital Support Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0331**

| | 1997-2006 Total | 2007-2070 Total | 1997-2070 Total | 1997 | Actual 1997 | 1998 | Actual 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | |
|---|--------------------|--------------------|--------------------|-------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| PBS Baseline (current year dollars) | 19,221 | 0 | 19,221 | 6,362 | 6,362 | 10,030 | 10,030 | 2,829 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PBS Baseline (constant 1999 dollars) | 19,221 | 0 | 19,221 | 6,362 | 6,362 | 10,030 | 10,030 | 2,829 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PBS EM Baseline (current year dollars) | 19,216 | 0 | 19,216 | 6,357 | 6,357 | 10,030 | 10,030 | 2,829 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PBS EM Baseline (constant 1999 dollars) | 19,216 | 0 | 19,216 | 6,357 | 6,357 | 10,030 | 10,030 | 2,829 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2007 | 2008 | 2009 | 2010 | 2011- 2015 | 2016- 2020 | 2021- 2025 | 2026- 2030 | 2031- 2035 | 2036- 2040 | 2041- 2045 | 2046- 2050 | 2051- 2055 | 2056- 2060 | 2061- 2065 | 2066- 2070 |
| PBS Baseline (current year dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS Baseline (constant 1999 dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (current year dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (constant 1999 dollars) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Non-EM Costs included in the Cost Baseline

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------------------------|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Non-EM Category: Other | | | | | | | | | | | | | |
| Defense Programs | 0 | | | | | | | | | | | | |
| | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Rocky Flats

Site Summary Level: Rocky Flats Environmental Technology Site

Project RF004 / SNM Capital Support Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0331

| | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
|---------------------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Non-EM Category: | Other | | | | | | | | | | | | |
| Defense Programs | | | | | | | | | | | | | |
| Baseline Escalation Rates | | | | | | | | | | | | | |
| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| | 0.00% | 0.00% | 0.00% | 2.70% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% |
| | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
| | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% |

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2001

Current Projected End Date of Project: 9/30/1999

Explanation of Project Completion Date Difference (if applicable):

Scope Deletion

Efficiencies

New Scope

Cost Growth

Science & Technology

Other

The scope of work and end state conditions for the 2006 Plan are similar to the current 2010 Baseline, with a four-year acceleration and a reduction in cost being the two most significant differences. The bottom-up estimate for the 2006 Plan is a \$1.65 billion improvement over the comparable activity-based bottoms-up detail estimate for 2010.

Dataset Name: FY 1999 Planning Data

Date of Dataset: 9/20/1999

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Rocky Flats

Site Summary Level: Rocky Flats Environmental Technology Site

Project RF004 / SNM Capital Support Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0331

Project Reconciliation

To close the Site four years earlier than the current 2010 Baseline requires a strategically different approach. The two key principles followed in preparing the 2006 Baseline were: 1) safely reducing the urgent risks first, and 2) performing work in a sequence that reduces or eliminates operations, maintenance and security costs (often referred to as - mortgage costs) as early as possible. Key to the 2006 Baseline approach is early closure of the secured Protected Area. Closing the Protected Area as soon as possible means that the high security and maintenance costs for this area can be redeployed to accelerate other closure activities. In addition, D&D and SNM risk reduction activities will be performed simultaneously rather than sequentially, supporting both the risk reduction and mortgage reduction principles. The D&D of non- and lower-contaminated facilities and most environmental remediation work will be deferred until later in the project to allow resources to be focused in the areas that result in the greatest reduction in risks and mortgage costs.

Project Cost Estimates (in thousands of dollars)

| | | | | | |
|---|--------|--|-------|-------------------|--------|
| Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars): | 17,409 | Actual 1997 Cost: | 6,357 | Actual 1998 Cost: | 10,030 |
| Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars): | 1,022 | Inflation Adjustment (2.7% to convert 1998 to 1999 dollars): | | | 28 |
| Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): | 1,050 | | | | |

Project Cost Changes

| | Cost Adjustments | Reconciliation Narratives |
|---|------------------|--|
| Cost Change Due to Scope Deletions (-): | | |
| Cost Reductions Due to Efficiencies (-): | | |
| Cost Associated with New Scope (+): | 23,167 | Rebaselining due to acceleration. New scope dollar estimate is not of audit quality. |
| Cost Growth Associated with Scope Previously Reported (+): | | |
| Cost Reductions Due to Science & Technology Efficiencies (-): | | |
| Subtotal: | 24,217 | |
| Additional Amount to Reconcile (+): | -21,388 | |
| Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): | 2,829 | |

Milestones

| Milestone/Activity | Field Milestone Code | Original Date | Baseline Date | Legal Date | Forecast Date | Actual Date | EA | DNFSB | Mgmt. Commit. | Key Decision | Intersite |
|--|----------------------|---------------|---------------|------------|---------------|-------------|----|-------|---------------|--------------|-----------|
| Complete PBD 004 - SNM Capital Support Project | RF-OTHE-04 | | 9/30/1999 | | 9/30/1999 | | | | | Y | |
| PBD004 Project Start | | | 10/1/1997 | | | | | | | | |

Dataset Name: FY 1999 Planning Data

Date of Dataset: 9/20/1999

Page 7 of 8

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF004 / SNM Capital Support Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0331**

Milestones - Part II

| Milestone/Activity | Field Milestone Code | Critical Decision | Critical Closure Path | Project Start | Project End | Mission Complete | Tech Risk | Work Scope Risk | Intersite Risk | Cancelled | Milestone Description |
|--|----------------------|-------------------|-----------------------|---------------|-------------|------------------|-----------|-----------------|----------------|-----------|--|
| Complete PBD 004 - SNM Capital Support Project | RF-OTHE-04 | | | | Y | Y | | | | | Kaiser Hill Internal (KHIs) Milestones |
| PBD004 Project Start | | | | Y | | | | | | | PBD004 Project Start |